



DEPARTMENT ORDER

Eastern Maine Medical Center
Penobscot County
Bangor, Maine
A-184-71-T-A

Departmental
Findings of Fact and Order
Air Emission License
Amendment #1

FINDINGS OF FACT

After review of the air emission license amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

Eastern Maine Medical Center (EMMC) was issued Air Emission License A-184-71-R-R on March 9, 2016, for the operation of emission sources associated with their healthcare facility.

The equipment addressed in this license amendment is located at 489 State Street in Bangor, Maine.

EMMC has requested an after-the-fact amendment to their license in order replace Snowmelter #1 with an identical, like-kind unit.

B. Emission Equipment

The following equipment is addressed in this air emission license amendment:

Snowmelting Equipment

Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate (scf/hr)	Fuel Type	Date of Install.
Snowmelter #1 ^a	9.27 ^b	9,000	natural gas	2022
Snowmelter #2	9.27 ^b	9,000	natural gas	2008
Snowmelter #3	9.27 ^b	9,000	natural gas	2010
Snowmelter #4	9.27 ^b	9,000	natural gas	2010

^a This new unit replaces the previously licensed Snowmelter #1.

^b The maximum heat input capacities of all units have been revised based on a maximum fuel consumption of 9,000 scf/hr and an assumed heat content of 1,030 Btu/scf.

C. Definitions

Records or Logs mean either hardcopy or electronic records.

D. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the date this license was issued.

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the “Significant Emissions” levels as defined in the Department’s *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100. The emission increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions.

This amendment will not result in any change in licensed annual emissions. This modification is determined to be a minor modification and has been processed as such.

E. Facility Classification

With the annual fuel use limits on the boilers and snowmelters and the operating hours restrictions on the emergency generators and the Combustion Turbine Generator, the facility is licensed as follows:

- As a synthetic minor source of air emissions for criteria pollutants, because EMMC is subject to license restrictions that keep facility emissions below major source thresholds for NO_x and CO; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Snowmelter #1

EMMC operates four snowmelters used in winter maintenance activities. Each snowmelter has a natural gas-fired burner with a maximum heat input of 9.27 MMBtu/hr (previously listed as 9.0 MMBtu/hr). EMMC has replaced Snowmelter #1 with a new unit of the same make and model, a Trecon 40-SG Snowmelter.

1. BACT Findings

EMMC submitted a BACT analysis for control of emissions from the new Snowmelter #1.

a. Particulate Matter (PM, PM₁₀, PM_{2.5})

EMMC has proposed to burn only low-ash content fuels (natural gas) in Snowmelter #1. Additional add-on pollution controls are not economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

BACT for PM/PM₁₀/PM_{2.5} emissions from Snowmelter #1 is the firing of natural gas and the emission limits listed in the tables below.

b. Sulfur Dioxide (SO₂)

EMMC has proposed to fire only natural gas in Snowmelter #1. The use of this fuel results in minimal emissions of SO₂, and additional add-on pollution controls are not economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

BACT for SO₂ emissions from Snowmelter #1 is the use of natural gas and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC)

EMMC considered several control strategies for the control of NO_x, CO, and VOC including oxidation catalysts and thermal oxidizers.

Oxidation catalysts and thermal oxidizers both have high capital, maintenance, and operational costs considering the size of the units in question. These controls were determined to not be economically feasible due to the cost of control equipment compared to the relatively small amount of pollutant controlled.

BACT for NO_x, CO, and VOC emissions from Snowmelter #1 is the firing of natural gas and the emission limits listed in the tables below.

d. Emission Limits

The BACT emission limits for Snowmelter #1 were based on the following:

- PM/PM₁₀/PM_{2.5} – 0.05 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
 - SO₂ – 0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
 - NO_x – 100 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
 - CO – 84 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
 - VOC – 5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
 - Visible – 06-096 C.M.R. ch. 101
- Emissions

The BACT emission limits for Snowmelter #1 are the following:

Unit	Pollutant	lb/MMBtu
Snowmelter #1	PM	0.05

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Snowmelter #1	0.46	0.46	0.46	0.01	0.90	0.76	0.05

The snowmelters shall be limited to firing 18 MMscf combined of natural gas on a 12-month rolling total basis. Compliance shall be demonstrated by records of fuel use on a monthly and 12-month rolling total basis.

2. Visible Emissions

Visible emissions from each of the snowmelter burners shall not exceed 10% opacity on a six-minute block average basis.

3. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

Due to its size, Snowmelter #1 is not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

4. National Emission Standards for Hazardous Air Pollutants (NESHAP): 40 C.F.R. Part 63, Subpart JJJJJ

Snowmelter #1 does not heat water to recover thermal energy. It does not meet the definition of a “boiler” and therefore is not subject to *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63 Subpart JJJJJ.

C. Annual Emissions

This license amendment will not change the facility's licensed annual emissions.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License Amendment A-184-71-T-A subject to the conditions found in Air Emission License A-184-71-R-R and the following conditions.

Severability. The invalidity or unenforceability of any provision of this License Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This License Amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

The following shall replace Condition (21) of Air Emission License A-184-71-R-R (3/9/2016).

(21) Snowmelters #1 - #4

- A. Snowmelters #1 - #4 shall each fire only natural gas. [06-096 CMR 115, BACT]
- B. Snowmelters #1 - #4 shall be limited to a combined fuel use limit of 18 MMscf of natural gas on a 12 month rolling total basis. A fuel meter shall be operated and maintained for compliance purposes. [06-096 CMR 115, BACT]
- C. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Snowmelter #1	PM	0.05	06-096 C.M.R. ch. 115, BACT
Snowmelter #2	PM	0.05	06-096 C.M.R. ch. 115, BACT
Snowmelter #3	PM	0.05	06-096 C.M.R. ch. 115, BACT
Snowmelter #4	PM	0.05	06-096 C.M.R. ch. 115, BACT

D. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

Emission Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Snowmelter #1	0.46	0.46	0.46	0.01	0.90	0.76	0.05
Snowmelter #2	0.46	0.46	0.46	0.01	0.90	0.76	0.05
Snowmelter #3	0.46	0.46	0.46	0.01	0.90	0.76	0.05
Snowmelter #4	0.46	0.46	0.46	0.01	0.90	0.76	0.05

E. Visible emissions from each of the snowmelter burners shall not exceed 10% opacity on a six-minute block average basis. [06-096 CMR 101]

DONE AND DATED IN AUGUSTA, MAINE THIS 13th DAY OF DECEMBER, 2023.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for
MELANIE LOYZIM, COMMISSIONER

The term of this license amendment shall be ten (10) years from the issuance of Air Emission License A-184-71-R-R (issued 3/9/2016).

[Note: If a renewal application, determined as complete by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 M.R.S. § 10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the license renewal application.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 2/14/2023

Date of application acceptance: 2/14/2023

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

FILED
DEC 13, 2023
State of Maine
Board of Environmental Protection